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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/079,468	05/15/1998	AKIRA NISHIMURA	360842003400	8388

7590 05/03/2007
Morrison & Forester LLP
1650 Tysons Boulevard
Suite300
McLean, VA 22102

EXAMINER

JUSKA, CHERYL ANN

ART UNIT	PAPER NUMBER
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1771

MAIL DATE	DELIVERY MODE
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05/03/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/079,468

Applicant(s)

NISHIMURA ET AL.

Examiner

Cheryl Juska

Art Unit

1771

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22-28, 43, 44 and 46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22-28, 43, 44 and 46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>7/06, 11/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicant's amendment filed February 5, 2007, has been entered. Claim 22 has been amended as requested. Claims 1-21, 29-42, and 45 are cancelled. Thus, the pending claims are 22-28, 43, 44, and 46.
2. Said amendment is sufficient to withdraw the 112, 2nd rejections set forth in sections 5 and 6 of the last Office Action. Additionally, said amendment is sufficient to overcome the 112, 1st rejection set forth in section 8 of the last Office Action.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. Claims 22-28, 43, 44, and 46 are rejected under 35 USC 103(a) as being unpatentable over US 5,447,785 issued to Kishi et al. in view of US 5,100,713 issued to Homma et al.

Kishi's patent is concerned with the creation of a cloth prepreg comprising a woven fabric impregnated with a resin. Kishi teaches a post-impregnated prepreg having a cover factor anticipating applicant's claimed cover factor (col. 14, lines 35-41). Kishi's fabric also discloses applicant's claimed crossing point ranges, width, yarn flatness, and area between openings of warp and weft (cols. 3-4, lines 40-10 and col. 10, lines 1-20). The fabric woven from carbon fiber has a weight anticipating applicant's claimed weight (col. 11, lines 1-15). The resin may

comprise a thermosetting phenol resin (col. 17, fines 45-60). Kishi teaches applying a sizing agent to the yarns (col. 10, lines 10-30).

Kishi is concerned with maintaining yarn flatness but fails to teach applying a binder in a line-like manner. Homma is concerned with the creation of an impregnated carbon fiber prepreg (abstract). Homma teaches applying a binder in a line-like manner to (col. 5, fines 42-50 and col. 6, line 54). Therefore, it would have been obvious to a person having ordinary skill in the art to use the line-like binder of Homma in the fabric of Kishi. Such a combination would have been motivated by the desire to increase a resin's ability to impregnate the prepreg (col. 6, lines 50-54), to aid in maintaining yarn flatness, and to increase the dimensional stability of the fabric.

Regarding the claim recitation that the impregnating resin comprises a solvent, wherein at least 80% of said solvent is incompatible with the binder distributed in a line-like manner, applicant argues that said solvent remains in an amount of about 1-2% in the final product. As such, applicant asserts patentable weight must be given to said claim recitation (Amendment, page 4, 5th paragraph – page 5, 1st paragraph). The examiner agrees in view of applicant's arguments and the copy of page 149 of "Engineered Materials Handbook—Volume 1—Composites." However, the claims remain obvious over the cited prior art.

First, Kishi explicitly teaches a wet process for making the fabric prepreg wherein the impregnating resin is dissolved in a solvent (col. 15, lines 2-9). As argued by applicant, a wet process of making the prepreg inherently will produce a cloth prepreg having residual solvent. Hence, the claim recitation of "a woven fabric impregnated with a resin comprising a solvent" is met by the teachings of Kishi.

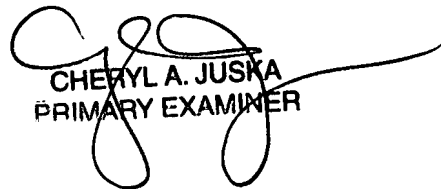
Secondly, Homma teaches the prepreg may be impregnated with a thermosetting resin. Although Homma is silent with respect to the use of a solvent for application of said thermosetting resin, Kishi teaches the wet process of a resin dissolved in a solvent is a conventional method of applying resin to form a prepreg. As such, it would be readily obvious to one of ordinary skill in the art to employ a solvent for dissolving the resin which is not a solvent for any of the other materials in the prepreg, including the line-like thermoplastic binder of Homma. If one were to select a solvent for the impregnating resin which was also a solvent for the fibers of the fabric or the line-like binder, the intention of the prepreg would be destroyed. For example, if said solvent also dissolved the thermoplastic resin employed for the line-like binder, then the purpose of the binder would be defeated. Hence, it would have been readily obvious to one of ordinary skill to select a solvent for the wet process of prepreg formation and to select a binder resin for maintaining the yarn and fabric structure which are incompatible with each other. Therefore, claims 22-28, 43, 44, and 46 stand rejected as being obvious over the cited prior art.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cheryl Juska whose telephone number is 571-272-1477. The examiner can normally be reached on Monday-Friday 10am-6pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached at 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1771

6. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


CHERYL A. JUSKA
PRIMARY EXAMINER

cj
April 28, 2007